Accelerated Weathering Test

Decoral LAB
Research and Development

LEGNI ROSSI
series

MRK-010-0315

TEST DI INVECCHIAMENTO ACCELERATO:

Invecchiamento accelerato

Tutti i campioni vengono sottoposti all'irraggiamento di lampade allo xenon ed a cicli umido/secco mediante speciali apparecchiature (Q-Sun, SolarBox).Tali apparecchiature vengono utilizzate in conformità agli standard internazionali imposti dalla norma ISO 11341 rispettando le seguenti impostazioni:

- intensità luminosa, 550±20W/m^2 (290-800 nm)
- temperatura del pannello nero, 65 ± 5°C
- ciclo umido 18 minuti
- ciclo secco 102 minuti

Alla fine dei test, che normalmente hanno una durata minima di 1000 ore, viene valutata la variazione di brillantezza (EN ISO 2813, con angolo di incidenza 60°) ed il cambiamento di colore ΔE (metodo CIELAB ISO 7724/3) rispetto ai valori di partenza. Questo permette di stabilire, in maniera parametrizzata, l'invecchiamento delle varie superfici testate. La corretta conduzione dei test viene verificata attraverso l'utilizzo di campioni in bianco ad invecchiamento noto.

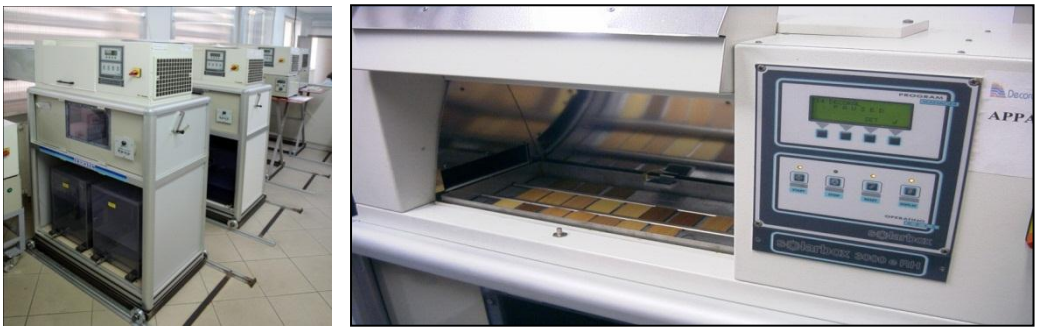


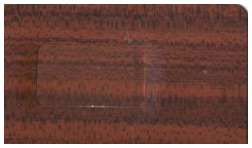
Figure: apparecchiature per l'invecchiamento accelerato.
Pictures: equipment for the Accelerated Weathering Test

Accelerated Weathering Test

All samples are exposed to radiation of Xenon lamps and to wet/dry cycles by special equipment (Q-Sun, SOLARBOX). Such equipment is used in accordance with international standards imposed by norm ISO 11341, i.e. complying with the following settings:

- light intensity, 550 ± 20 W / m^2 (290-800 nm)
- black panel temperature, 65 ± 5 ° C
- wet cycle 18 minutes
- dry cycle 102 minutes.

At the end of the test, whose minimum duration is 1000 hours, Residual Gloss (EN ISO 2813, with an angle of incidence 60°) and Colour Variation ΔE (CIELAB method - ISO 7724 / 3) are measured comparing pre-test values. In this way it is possible to evaluate the aging of surfaces using standard indexes. The accuracy of the test is verified through the use of samples in white, whose aging behaviour is know.

ID Test Report	PROD. VERNIC	COD. FILM	PROG. N°	IMMAGINI
TR-IA-252-2013	DS 706	1413/03	252	
TR-IA-253-2013	DS 706	1701/01	253	
TR-IA-254-2013	DS 794	1109/03	254	
TR-IA-255-2013	DS 794	2516/06	255	
TR-IA-256-2013	DS 794M	2503/04	256	
TR-IA-257-2013	DS 794M	2507/18	257	

Test Report: Accelerated Weathering Test

Decoral LAB Research and Development

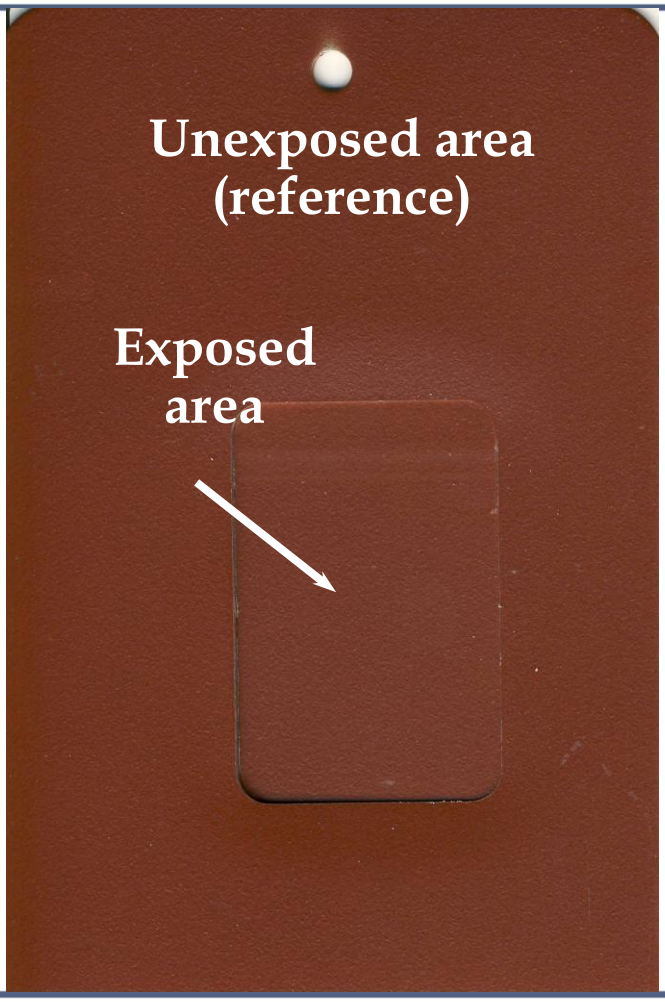
252

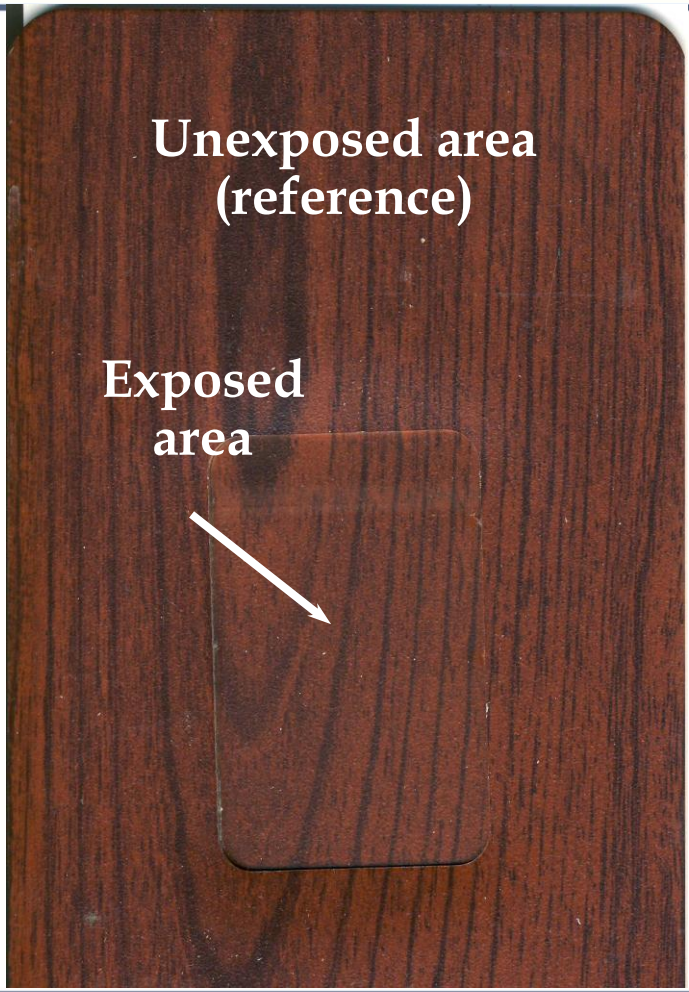
Laboratory Test

No. 385

Device: Solar 3000e

Total duration: 1160h





LAB. ID NUMBER: 32152
POWDER COATING: DS 706
HEAT TRANSFER FILM: --
colour variation (ΔE): **0,35**
residual gloss: **86%**

LAB. ID NUMBER: 32153
POWDER COATING: DS 706
HEAT TRANSFER FILM: 1413/03
colour variation (ΔE): **1,09**
residual gloss: **82%**

Technical Remarks

Excellent residual gloss and very low colour variation (ΔE), after 1160 hours, on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Test Report: Accelerated Weathering Test

Decoral LAB Research and Development

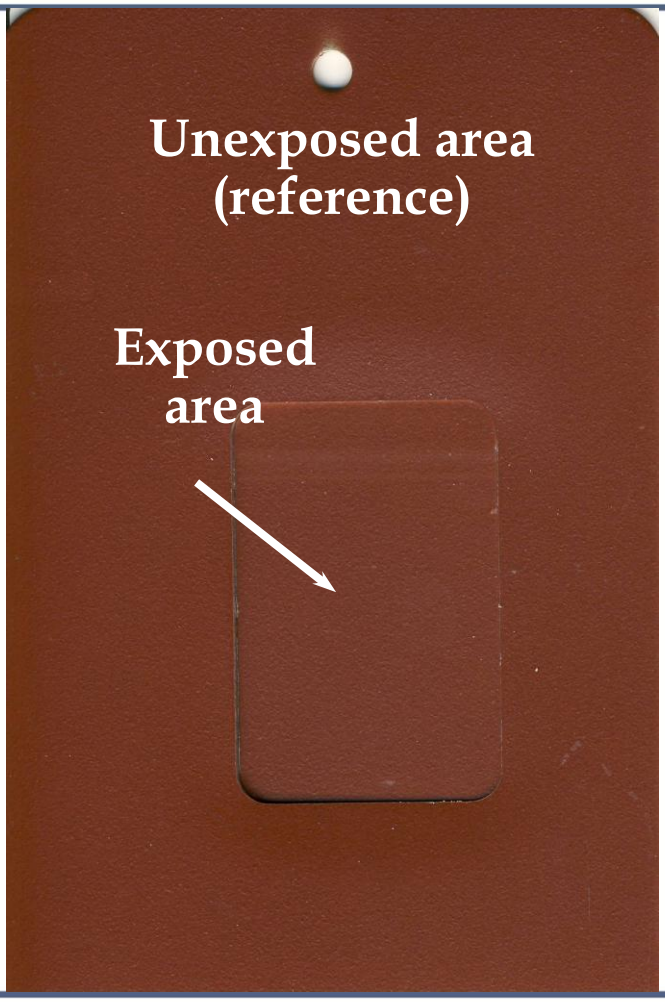
253

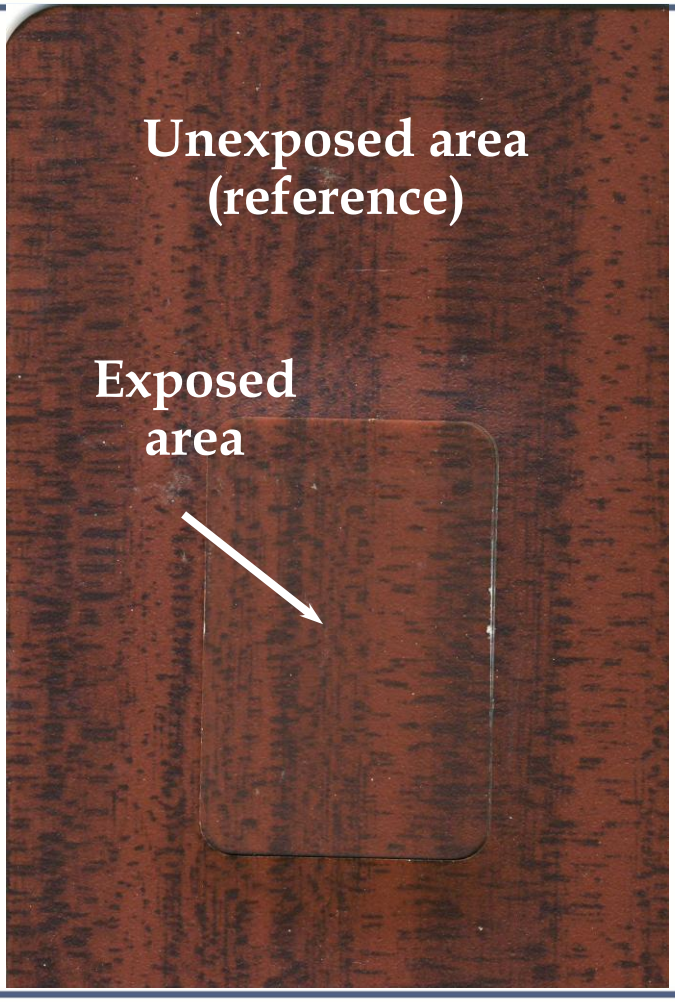
Laboratory Test

No. 385

Device: Solar 3000e

Total duration: 1160h





LAB. ID NUMBER: 32152
POWDER COATING: DS 706
HEAT TRANSFER FILM: --
colour variation (ΔE): **0,35**
residual gloss: **86%**

LAB. ID NUMBER: 32154
POWDER COATING: DS 706
HEAT TRANSFER FILM: 1701/01
colour variation (ΔE): **1,66**
residual gloss: **51%**

Technical Remarks

Excellent residual gloss and very low colour variation (ΔE), after 1160 hours, on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

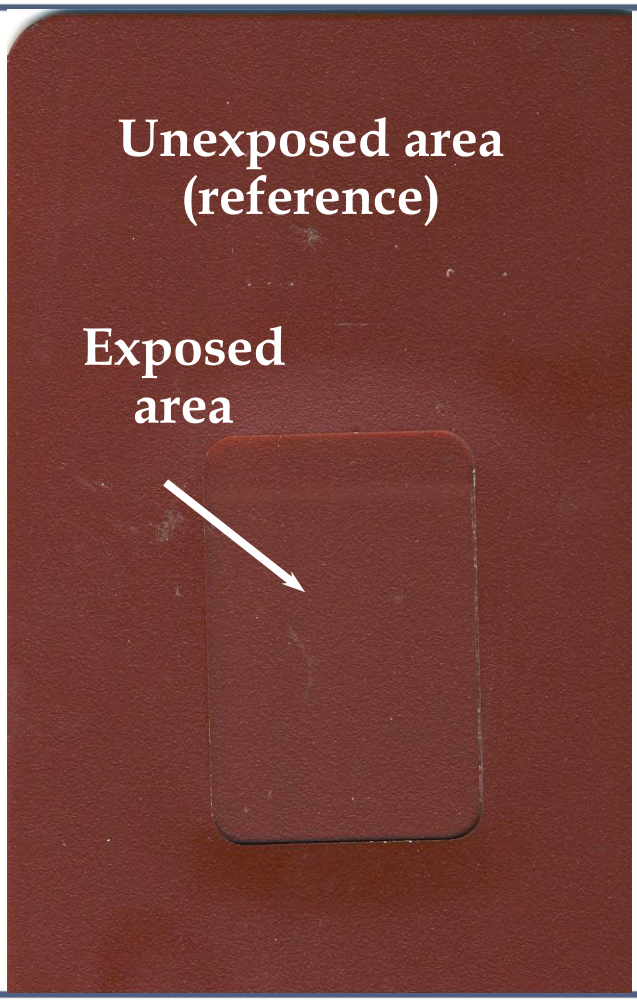
Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Test Report: Accelerated Weathering Test

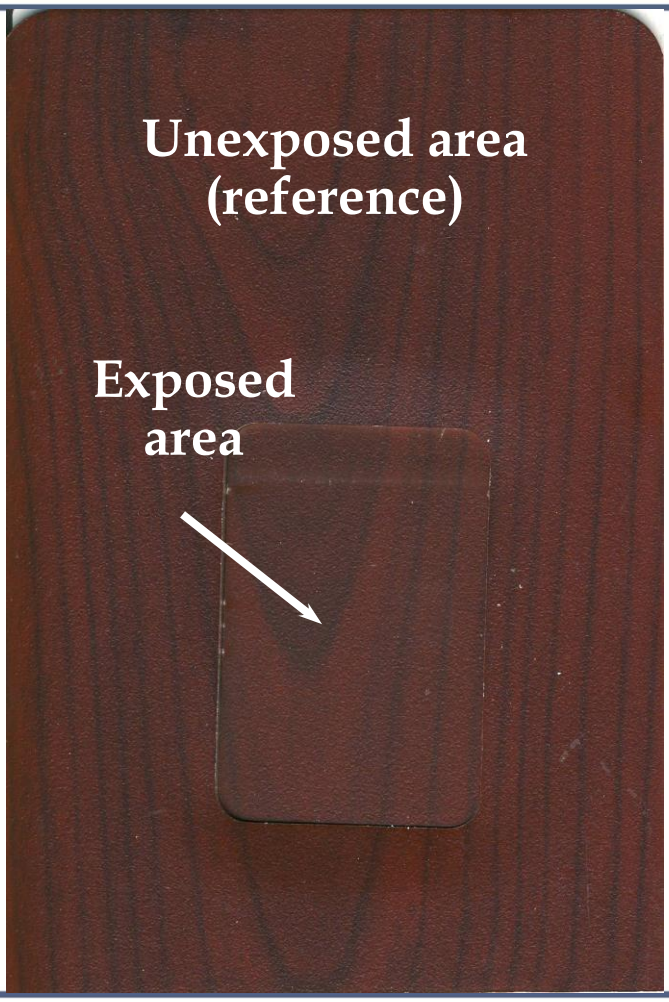
Decoral LAB Research and Development

254

Laboratory Test	No. 385	Device: Solar 3000e	Total duration: 1160h



LAB. ID NUMBER: 32155
POWDER COATING: DS 794
HEAT TRANSFER FILM: --
colour variation (ΔE): **0,39**
residual gloss: **86%**



LAB. ID NUMBER: 32159
POWDER COATING: DS 794
HEAT TRANSFER FILM: 1109/03
colour variation (ΔE): **0,86**
residual gloss: **81%**

Technical Remarks

Excellent residual gloss and very low colour variation (ΔE), after 1160 hours, on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

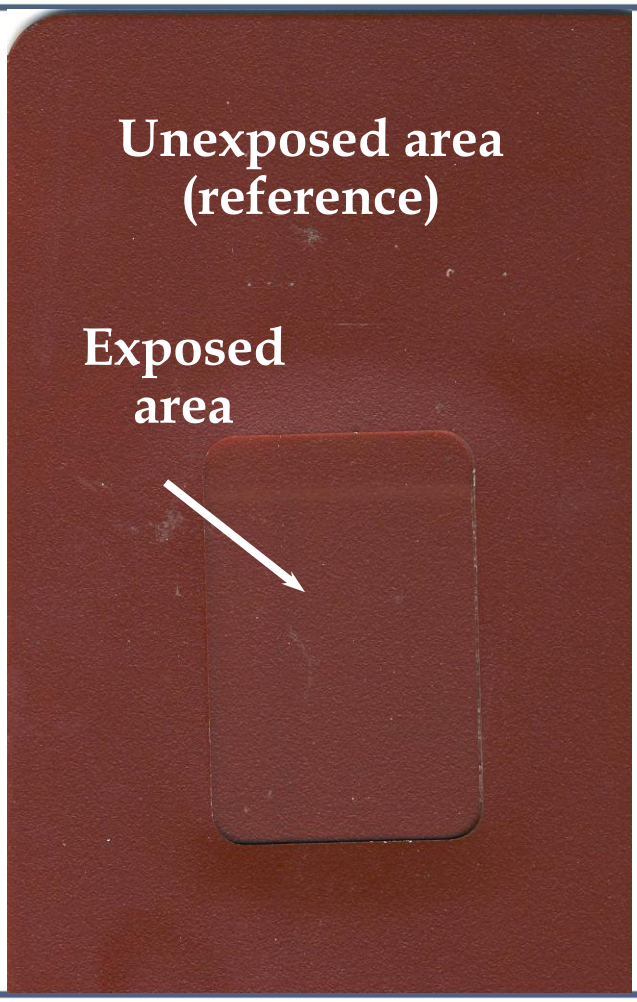
Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Test Report: Accelerated Weathering Test

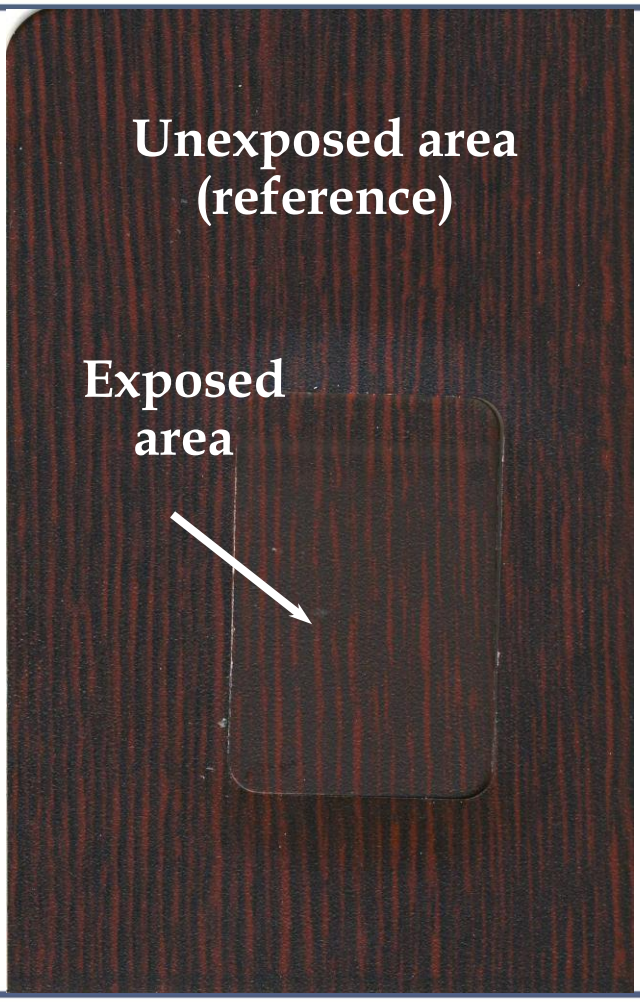
Decoral LAB Research and Development

255

Laboratory Test	No. 385	Device: Solar 3000e	Total duration: 1160h



LAB. ID NUMBER: 32155
POWDER COATING: DS 794
HEAT TRANSFER FILM: --
colour variation (ΔE): **0,39**
residual gloss: **86%**



LAB. ID NUMBER: 32157
POWDER COATING: DS 794
HEAT TRANSFER FILM: 2516/06
colour variation (ΔE): **1,15**
residual gloss: **73%**

Technical Remarks

Excellent residual gloss and very low colour variation (ΔE), after 1160 hours, on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Test Report: Accelerated Weathering Test

Decoral LAB Research and Development

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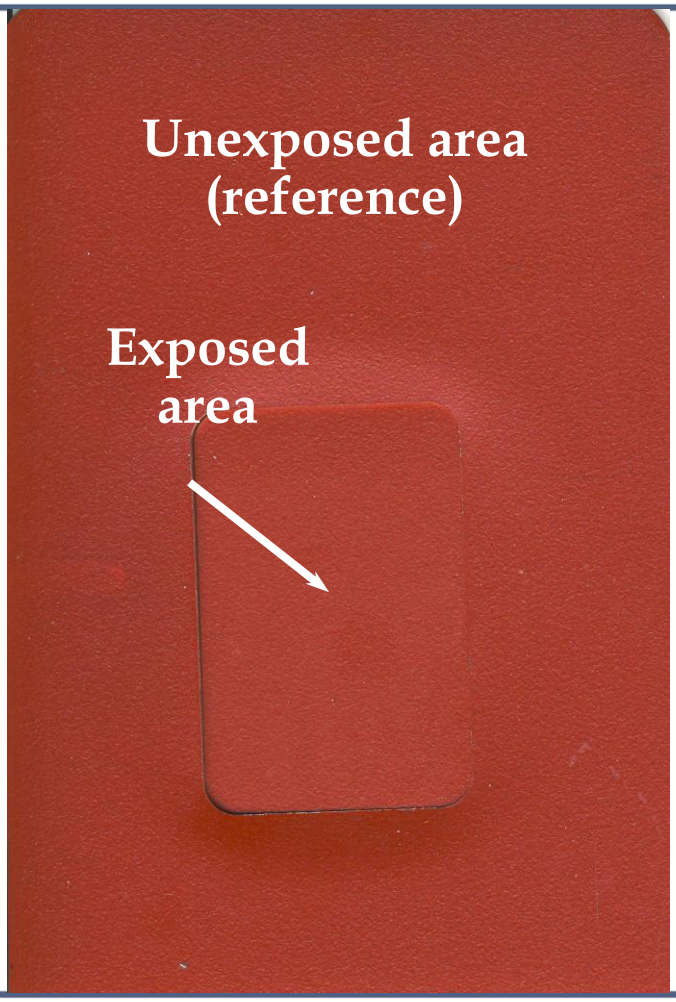
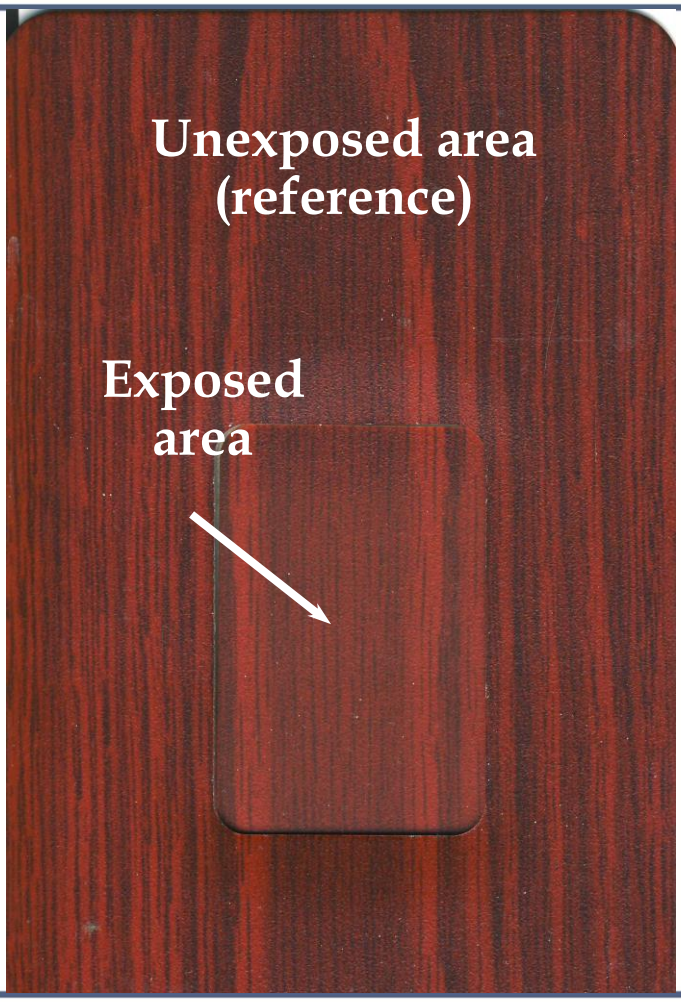
Laboratory Test	No. 386	Device: QSun 3000	Total duration: 1046h



LAB. ID NUMBER: 32160
POWDER COATING: DS 794M
HEAT TRANSFER FILM: --
colour variation (ΔE): **1,55**
residual gloss: **82%**



LAB. ID NUMBER: 32161
POWDER COATING: DS 794M
HEAT TRANSFER FILM: 2503/04
colour variation (ΔE): **2,46**
residual gloss: 5**7%**

Technical Remarks

Excellent residual gloss and very low colour variation (ΔE), after 1046 hours, on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Test Report: Accelerated Weathering Test

Decoral LAB Research and Development

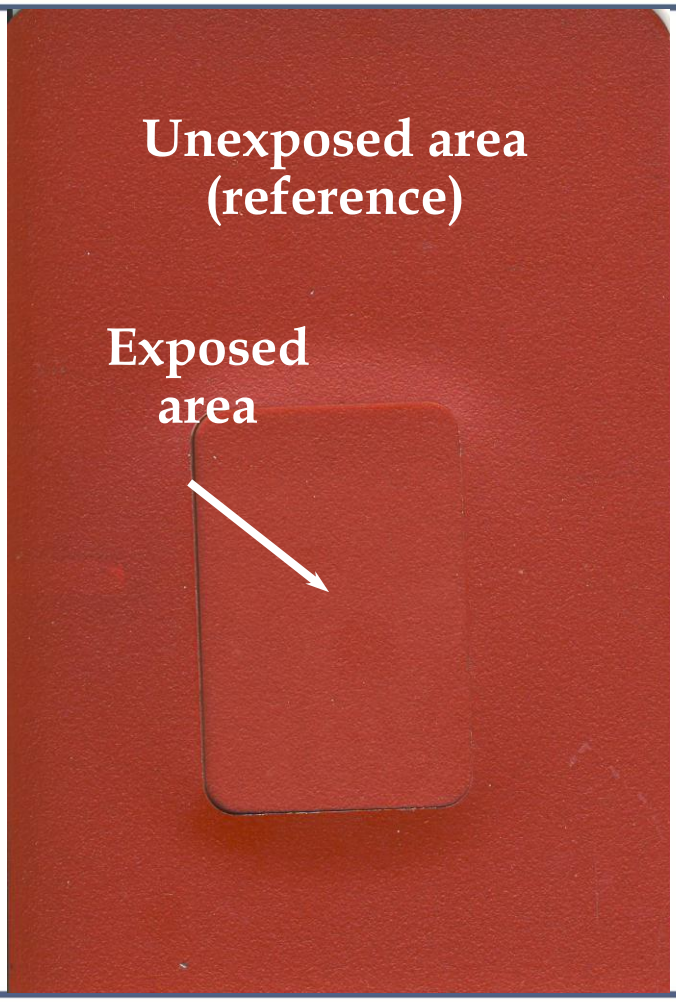
257

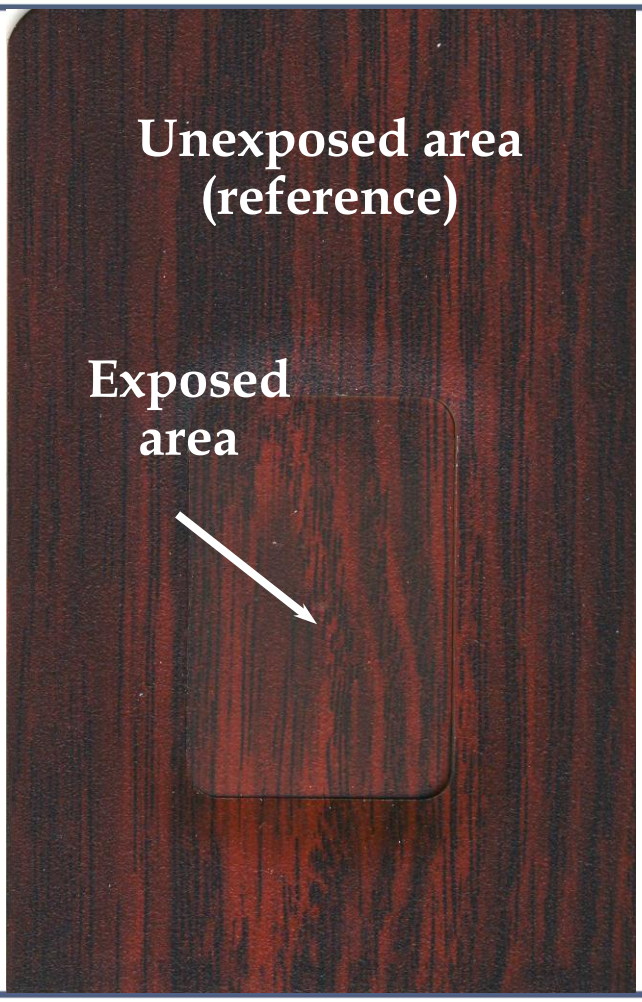
Laboratory Test

No. 386

Device: QSun 3000

Total duration: 1046h





LAB. ID NUMBER: 32160
POWDER COATING: DS 794M
HEAT TRANSFER FILM: --
colour variation (ΔE): **1,55**
residual gloss: **82%**

LAB. ID NUMBER: 32164
POWDER COATING: DS 794M
HEAT TRANSFER FILM: 2507/18
colour variation (ΔE): **2,18**
residual gloss: **62%**

Technical Remarks

Excellent residual gloss and very low colour variation (ΔE), after 1046 hours, on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.